

ANNUAL

WATER  
QUALITY  
REPORT

*Water testing performed in 2009*



PWSID#: 2332000

This report was prepared by:  
Westminster Department of Public Works  
2 Oakmont Avenue  
Westminster, MA 01473

## Maintaining High Standards

Once again we are proud to present our annual water quality report. This report covers all testing performed between January 1 and December 31, 2009. The events of the past few years have presented many of us with challenges we could not have imagined. Yet, in spite of this we have maintained our high standards in an effort to continue delivering the best quality drinking water possible. For 2009, we received a drinking water award from the MassDEP for outstanding performance. There may be other hurdles in the future but know that we will always stand behind you and the drinking water we work diligently to provide.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions, we are always available to assist you.

For more information about this report, or for any questions relating to your drinking water, please call Joshua W. Hall, P.E., Director of Public Works, at (978) 874-5572.

## Community Participation

The Public Works Commission meets the 2nd and 4th Tuesdays of each month beginning at 7 p.m. at the Department of Public Works, 2 Oakmont Avenue. These meetings are open to the public and often have water-related issues on the agenda.

## Where Does My Water Come From?

The Town of Westminster Water Department customers receive water from the City of Fitchburg. The Regional Treatment Facility located on Hager Park Road – Route 140 can draw water from three reservoirs, which are called surface water sources. The reservoirs are located in Westminster, Princeton, and Hubbardston. These reservoirs are Meetinghouse Pond, Mare Meadow Reservoir, and Bickford Pond. After the water leaves the reservoirs, the Treatment Facility treats the water to remove contaminants and adds disinfectant to protect our customers against microbial contaminants. Once the water is treated, it is pumped from our booster station, located just south of the Treatment Facility, into the distribution system to Westminster water customers.

## What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. For more information, review the Cross-Connection Control Manual from the U.S. EPA's Web site at [www.epa.gov/safewater/crossconnection.html](http://www.epa.gov/safewater/crossconnection.html). You can also call the Safe Drinking Water Hotline at (800) 426-4791.

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Substances that may be present in source water include: Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife; Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and which may also come from gas stations, urban stormwater runoff, and septic systems; and Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.

Turn off the tap when brushing your teeth.

Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.

Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.

Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

## Lead and Drinking Water

Elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children, who are typically more vulnerable to lead in drinking water than the general population. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. It is possible that lead levels in your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. The Westminster Water Department is responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can reduce lead content by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Additional information about lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or online at <http://www.epa.gov/safewater/lead>.

## What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses about 100 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet, twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to [www.h2oconserve.org](http://www.h2oconserve.org) or visit [www.waterfootprint.org](http://www.waterfootprint.org) to see how the water footprints of other nations compare.

## Source Water Assessment and Protection Program (SWAP)

Massachusetts conducts a source water susceptibility assessment as a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area. In 2002, the MassDEP ranked Fitchburg's reservoirs as having high susceptibility. The susceptibility of a water source to contamination does not imply poor water quality. Actual water quality is best reflected by the results of regular water tests. Fitchburg protects the drinking water by monitoring the water for chemicals, treating, filtering, and disinfecting the water supply, and by protecting the land surrounding the reservoirs. The full SWAP, which explains the MassDEP ranking, can be viewed online at <http://www.mass.gov/dep/water/drinking/2097000.pdf>, or by calling the Fitchburg Division of Water Supply at (978) 345-9616.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or [www.epa.gov/safewater/hotline/](http://www.epa.gov/safewater/hotline/).

## The Benefits of Fluoridation

Fluoride is a naturally occurring element in many water supplies in trace amounts. In our system, the fluoride level is adjusted to an optimal level averaging one part per million (ppm or mg/l) to improve oral health in children. At this level, it is safe, odorless, colorless, and tasteless. There are over 3.9 million people in 140 Massachusetts water systems and 184 million people in the U.S. who receive the health and economic benefits of fluoridation.

## Information on the Internet

The U.S. EPA Office of Water ([www.epa.gov/watrhome](http://www.epa.gov/watrhome)) and the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also, the MassDEP Web site ([www.mass.gov/dep](http://www.mass.gov/dep)) provides complete and current information on water issues in Massachusetts, including valuable information about our watershed.

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state allows us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>Barium</b> (ppm)	2009	2	2	0.009	0.007–0.009	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
<b>Beryllium</b> (ppb)	2009	4	4	2	ND–2	No	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
<b>Chlorine</b> <sup>1</sup> (ppm)	2009	[4]	[4]	0.54	0.01–1.28	No	Water additive used to control microbes
<b>Fluoride</b> <sup>2</sup> (ppm)	2009	4	4	1.1	ND–1.1	No	Water additive which promotes strong teeth
<b>Haloacetic Acids [HAA]</b> <sup>3</sup> (ppb)	2009	60	NA	36.1	23.5–56.0	No	By-product of drinking water disinfection
<b>TTHMs [Total Trihalomethanes]</b> <sup>3</sup> (ppb)	2009	80	NA	70.7	60.0–66.9	No	By-product of drinking water chlorination
<b>Tetrachloroethylene</b> (ppb)	2009	5	0	1.2	ND–1.2	No	Discharge from factories and dry cleaners
<b>Turbidity</b> <sup>4</sup> (NTU)	2009	TT	NA	0.30	0.04–0.30	No	Soil runoff
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2009	TT	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
<b>Copper</b> (ppm)	2009	1.3	1.3	0.49	0/40	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
<b>Lead</b> (ppb)	2009	15	0	15	3/40	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES <sup>5</sup>				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
<b>Sodium</b> <sup>6</sup> (ppm)	2009	25	21–25	Natural sources; runoff from road salt; by-product of treatment process
<b>Sulfate</b> (ppm)	2009	4.3	4.0–4.3	Natural sources

INITIAL DISTRIBUTION SYSTEM EVALUATION <sup>7</sup>				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
<b>Haloacetic Acids [HAA]–IDSE Results</b> (ppb)	2009	NA	17.3–46.0	By-product of drinking water disinfection
<b>TTHMs [Total Trihalomethanes]–IDSE Results</b> (ppb)	2009	NA	ND–98.3	By-product of drinking water disinfection

<sup>1</sup>Amount Detected = Highest RAA = Highest running annual average

<sup>2</sup>Fluoride also has a secondary maximum contaminant level (SMCL) of 2 ppm. SMCL standards are developed to protect the aesthetic qualities of drinking water (look, smell, and taste) and are not health based.

<sup>3</sup>Amount detected = Highest RAA = Highest running annual average of four consecutive quarters

<sup>4</sup>Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

<sup>5</sup>Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

<sup>6</sup>Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the levels of sodium in their drinking water where exposures are being carefully controlled. ORSG (Massachusetts Office of Research and Standards Guideline): This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action. Sodium has a ORSG of 20 ppm.

<sup>7</sup>We were required by the U.S. EPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection by-product concentrations. Disinfection by-products (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

## Definitions

**90th Percentile:** Out of every 10 homes sampled, 9 were at or below this level.

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**NA:** Not applicable

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.